UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUL 18 2005

REPLY TO THE ATTENTION OF

MEMORANDUM

DATE:

SUBJECT: *ACTION MEMORANDUM - TIME-CRITICAL* Determination of Threat to Public Health or the Environment at the Lindsay Light II Site/160 East Illinois, Chicago, Cook County, Illinois (Site Spill ID #YT, OU 11)

FROM: Verneta Simon, On-Scene Coordinator Verneta Simon
Emergency and Enforcement Response Branch - Section III

TO: Richard C. Karl, Director
Superfund Division

I. PURPOSE

The purpose of this Memorandum is to document the determination of an imminent and substantial threat to public health and the environment posed by the construction of a building in an area contaminated with radioactive thorium. The owner of the property located at 160 East Illinois is constructing a new residential and retail development called Avenue East ("160 E. Illinois") upon the former location of the now-demolished Kieffer Building. This building site is located directly South of and extends into an alley behind the Lindsay Light Building which is also designated as Lindsay Light I Site, 161 East Grand. 160 E. Illinois is also immediately West of the Lindsay Light II/Grand Pier site, 227 East Grand. Due to its proximity to these other thorium-contaminated sites, U.S. EPA believed radiological investigation of 160 E. Illinois building site including adjacent alley and sidewalk rights-of-ways, was warranted.

This site is not on the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # ILD 0000002212

Please refer to the previous Lindsay Light II Action Memoranda dated July 11, 1994, October 5, 1995, April 22, 1996, September 22, 1999, March 28, 2000, March 1, 2001, and July 17, 2002, for a description of site conditions and background. These previous

Action memoranda and administrative records are fully incorporated by reference into this document.

A. Monazite Processing and Thorium Nitrate Manufacture
From approximately 1904 until the mid-1930s, the Lindsay Light Company manufactured commercial and residential incandescent gaslights and gaslight mantles at three different Streeterville locations in downtown Chicago, Illinois. Gas mantle manufacturing involved dipping gauze mantle bags into solutions containing thorium nitrate. The thorium nitrate caused the gaslight mantle to burn more brightly. The principal ingredient in thorium nitrate is radioactive thorium, specifically, thorium-232. Thorium-232, the parent of the Thorium Decay Series has a half-life of 14 billion years. Thorium is a radionuclide and a hazardous substance as defined by CERCLA.

Lindsay Light also refined radioactive monazite ore in the vicinity of 316 E. Illinois. During Lindsay Light's operation, the 316 E. Illinois property was contiguous to the present-day Grand Pier parcel. Columbus Drive (also known as Fairbanks) was not extended through the 316 E. Illinois and Grand Pier properties until the 1980s. Lindsay Light extracted thorium from monazite ore. The processed sands or "tailings" retained residual levels of radionuclides, specifically, thorium, radium and uranium. The refining process generated enormous quantities of radioactive mill tailings that required disposal and the tailings were used as fill material in Streeterville. The presence of the thorium contamination may be detected by gamma surveillance and confirmed by laboratory sampling.

B. Lindsay Light Moves Operations to West Chicago
In the mid-1930s Lindsay Light moved its operations to the City of West Chicago, about 30 miles west of its Streeterville location. U.S. EPA, Region 5 has not located any records of Lindsay Light's waste disposal in downtown Chicago, but there are records and testimony that when Lindsay Light moved its monazite processing plant to the City of West Chicago, Lindsay offered the radioactive ore tailings for free to the public and City of West Chicago for use as fill.

In the mid-1980s, as the corporate successor to Lindsay Light, Kerr-McGee Chemical Corporation, (Kerr-McGee) began to close the West Chicago Lindsay Light plant, the Department of Energy (DOE), Nuclear Regulatory Commission (NRC), and U.S. EPA conducted a series of investigations that revealed the widespread thorium contamination around West Chicago. The radioactive contamination discovered in residential areas, a park, school grounds and a sewage treatment plant was attributed to the practice of using the Lindsay Light thorium-contaminated tailings as fill. By 1992, U.S. EPA had designated four National Priority List sites in West Chicago resulting from the thorium fill.

C. Thorium Contamination Discovered in Streeterville
The investigation of the West Chicago thorium contamination eventually led to discovery of contamination at the Lindsay Light I, Lindsay Light Building, 161 E. Grand in 1993. During the 161 E. Grand investigation, U.S. EPA also found elevated levels of radioactivity in a parking lot built over portions of the former 316 E. Illinois (Lindsay Light II) monazite processing facility. U.S. EPA entered into an Administrative Order on Consent dated January 27, 1994 with the owner of 316 E. Illinois, to investigate the extent of thorium contamination. After the property investigation was complete, U.S. EPA unsuccessfully attempted to negotiate a consent agreement for cleanup with the River East owner and Kerr-McGee, the successor corporation to the operator at the time of disposal. The Agency issued a Unilateral Administrative Order dated June 6, 1996 (UAO) to the River East owner and Kerr-McGee for the cleanup of the site. Approximately 30,000 cubic yards of thorium contamination were excavated from the 316 E. Illinois, River East property and surrounding rights-of-ways. The UAO required the following actions:

1) Develop and implement site health and safety plan.

2) Conduct land surveying to the extent necessary to locate all property boundaries and features, sample locations and areas having elevated radiation levels.

3) Place borings in several locations for the purpose of measuring subsurface radiation levels. Measurements shall be recorded until the natural soils are reached or radiation levels reach background, whichever is the greatest depth.

4) Collect soil samples from the borings and analyze for radionuclide content and RCRA characteristics. These results will then be used to correlate subsurface radiation levels and radionuclide content.

5) Transport and dispose of all characterized or identified hazardous substances, pollutants, wastes or contaminants at a RCRA/CERCLA approved disposal facility in accordance with the U.S. EPA off-site rule.

D. Additional Streeterville Thorium Contamination
With respect to certain known and potentially unknown off-site contamination in right-of-ways surrounding the River East site, U.S. EPA, Region 5 wanted to ensure, given the long-lived nature of thorium, that any person intruding into the right-of-ways would take proper precautions and manage and dispose of any radioactively contaminated material encountered. U.S. EPA, Region 5 worked with River East, Kerr-McGee and the City of Chicago to develop a system to notify U.S. EPA, Region 5, Kerr-McGee and River East whenever a person applied for a permit

from the City of Chicago to intrude into those right-of-ways. The City of Chicago created a notice in its permit database designed to alert any permit applicant of the potential presence of radiation and the need to survey for radiation and properly manage and dispose of any radiation.

In February 2000, however, one entire block adjacent to River East was excavated for a replacement sewer line to serve the River East development without any notice to U.S. EPA or radiation surveillance. In addition, Grand Pier, 227 E. Grand began excavation of its property and adjacent rights-of-ways without prior notice or radiation surveillance and succeeded in shipping over 250 truckloads of potentially contaminated soils to a landfill in Elgin. U.S. EPA amended the existing UAO to include the Grand Pier property and more than 10,000 cubic yards of thorium contaminated soils were excavated from Grand Pier and surrounding rights-of-ways.

In addition to the Lindsay Light Building (161 E. Grand), River East (316 E. Illinois) and Grand Pier (227 E. Illinois), thorium contamination has also been excavated from 341 E. Ohio (Golub fka Teacher's Retirement System) and 221 N. Columbus Drive (Lakeshore East). Thorium contamination has also been identified at 245 E. Ohio (Hot Dog Stand), 500 N. Peshtigo (Kraft Building Parking Lot), 319 E. Illinois (HBE), and DuSable Park. These numerous locations in the Streeterville vicinity indicate that the radioactive ore tailings from the Lindsay Light monazite refining operations were widely used as fill in Streeterville in a similar manner as West Chicago.

E. Radiological Investigations at 160 E. Illinois
On July 21, 2000, Mark Goodman & Associates, Inc. the former 160 E. Illinois majority owner, surveyed the then-existing Kieffer Building at this property using the services of Bain Environmental and Radiation Safety Services, Inc. (RSSI). RSSI found a single area of slightly elevated radiation levels attributed to "brickwork" but reported that no other areas in the building exhibited radiological anomalies. On August 16, 2000, RSSI made six down-hole measurements and soil boring samples from the sidewalk rights-of-ways and alley. According to RSSI the measurements and analyses did not indicate the presence of thorium contamination. RSSI stated in a letter dated January 6, 2003, on behalf of the owner that "[w]e will contact you if changes are made in the building ... ."

On February 11, 2005, after the Kieffer building had been partially demolished, at the behest of U.S. EPA, the new majority owner, Residential Homes of America (Mark Goodman & Associates retained an interest in the property), the construction management company, The Rise Group, and consultants, RSSI and GeoSyntec, met to discuss the additional radiological

surveillance of the remaining building at 160 E. Illinois. Subsequently, the building owner engaged Stan Huber & Associates ("Huber") to perform additional radiation surveillance. Huber surveyed the remaining portions of the Kieffer Building on February 16 and 17, 2005 and identified two areas of elevated gamma readings. On February 18, 2005, U.S. EPA conducted a radiological survey of the building using a portable multi-channel analyzer, Berkeley Nucleonics SAM 935 Portable Gamma Spectroscopy System (SAM). The SAM confirmed the presence thorium in the two areas of elevated gamma readings identified by Huber. Results from the SAM are contained in the Administrative Record.

The two areas identified by U.S. EPA and Huber, were approximately 6 inches to 12 inches in diameter. U.S. EPA determined that the small areas of contamination did not present an unacceptable risk to human health or the environment. In addition, U.S. EPA and Huber surveyed the building timbers which were to be recycled. The timbers surveyed were not radioactively contaminated.

Since February 2005, the owner's construction management company has informed U.S. EPA of activities at the site. Based on the development progress to date, it appears that the Kieffer building was not constructed on timbers or limestone block, but spread footings, which suggests that caisson installation will be relatively unimpeded. Preliminary screening of the basement slab and under the basement slab did not indicate the presence of radioactive materials. Further, the potential to encounter thorium-impacted soils exists given the location and extent of excavation necessary for the foundation of the building.

On July 6, 2005, during excavation outside the perimeter of the foundation wall of the 160 E. Illinois property, the owner's contractor staff notified U.S. EPA that they had encountered elevated gamma radiation levels in the alley that separates this property from the 161 East Grand Avenue property (Lindsay Light Building) to the north. On July 7, 2005, U.S. EPA confirmed elevated gamma radiation levels on the south side of the alley, near St. Clair Street, in an area about 10 feet long and about 2 feet wide. Contaminated soil was below concrete under the alley's blacktop and brick pavers. Using a Berkeley Nucleonics SAM portable multi-channel analyzer, thorium radionuclides (thorium-232, thallium-208) and a uranium radionuclide (bismuth-214) were identified *in situ* at the peak gamma reading spot. A two by two sodium iodide probe measured a contact reading of 680,000 counts per minute compared to the cleanup criterion equivalent of 17,348 counts per minute. The peak reading was about 40 times the cleanup criterion. Soil was scooped from the point of peak gamma readings and sifted through a 1/4 inch screen. Two 400 milliliter soil samples and a 20 milliliter soil sample were taken of sifted soil. One 400 milliliter sample will

be sent to a U.S. EPA laboratory for gamma spectroscopy analysis to obtain radionuclide identity and concentration. The other two samples were taken by the owner's contractor for their analysis.

F. Environmental Justice Analysis
An environmental justice (EJ) analysis was performed for this site and is contained in Attachment 2. In Illinois, the low-income percentage is 27 % and the minority % is 32. To meet EJ concern criteria, the area within 1 mile of this property must have a population that is twice the state low income percentage or/and twice that state minority percentage. That is, the area must be at least 64% low-income and/or 54% minority. At this site, the low-income percentage is 13 % and minority percentage is 24%, as determined by Arcview. Therefore, this site does not meet the region's EJ criteria based on the demographics as identified in "Region 5 Interim Guidelines for Identifying and Addressing a Potential EJ Case, June 1998."

III. THREAT TO PUBLIC HEALTH OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at the Lindsay Light II Site/160 East Illinois may pose an imminent and substantial endangerment to public health or welfare or the environment, based upon factors set forth in the National Contingency Plan (NCP), 40 CFR 300.415 (b)(2). These factors include:

a) actual or potential exposure to nearby populations, animals, or the food chain from hazardous substances or pollutants or contaminants:

This factor is present at the site due to the presence of elevated thorium levels approximately 40 times higher than the cleanup level identified in the alley during construction excavation work. Construction laborers, utility workers, and earthmoving equipment may be in direct contact with subsurface soils and also may inadvertently remove contaminated soils from the building site.

b) high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate:

U.S. EPA confirmed the presence of thorium contamination approximately 40 times higher than the cleanup criterion in the alley that is being excavated to support construction of the building foundation at this site. Construction laborers, utility workers, and earthmoving equipment may be in direct contact with subsurface soils and also may inadvertently remove contaminated soils from the building site by tracking thorium on equipment, tires and clothing off. Excavation, grading, and other

earthmoving activities may release thorium by wind dispersal. As explained in Section II, past Action Memoranda identified thorium contamination at nearby locations in soils near the surface and in soils exposed during excavation activities.

c) other situations or factors which may pose threats to public health or welfare or the environment:

Since the initial removal at 316 East Illinois, U.S. EPA has become more knowledgeable about Lindsay Light in Chicago. For example, The Lindsay Light Company (Lindsay) manufactured, at several locations in the Streeterville neighborhood of Chicago, gas lights and gas mantles for residential and commercial use beginning in approximately 1904. The historic record regarding Lindsay's production of thorium is uncertain and it can not be assumed that Lindsay's thorium production in the Streeterville area did not start until 1915. According to a U.S. Tariff Commission document on the Incandescent Gas-Mantle Industry published in 1920, in 1914 Lindsay expanded its thorium manufacturing capacity to meet the increased domestic and foreign demand caused by the outbreak of war in Europe. The production of thorium for the gas light mantles resulted in a sandy waste known as mill tailings that made excellent fill material. The November 1935 Lindsay Board of Director's Meeting minutes discuss plans to move Lindsay's Streeterville operations to the City of West Chicago by September 1936. At the West Chicago facility, which became known as the Rare Earths Facility, Lindsay and its successors continued to produce thorium as well as other radioactive materials for commercial and defense-related purposes. As a result of Lindsay's Rare Earths Facility thorium manufacturing and disposal activities, four West Chicago areas were listed on the National Priorities List of Superfund sites.

In the West Chicago area, U.S. EPA, with the assistance of the Illinois Emergency Management Agency, Division of Nuclear Safety (IEMA/DNS) (formerly known as the Illinois Department of Nuclear Safety (IDNS)), has overseen the clean up of over 670 properties in residential areas, a 100-acre public park, a sewage treatment plant, and beginning in the Spring of 2005, the clean up of over six miles of creek and river in DuPage County. The widespread use of the thorium material as fill in West Chicago likely reflects a comparable use of the Lindsay Light thorium residuals in Chicago. Unlike the relatively open areas in the City of West Chicago where the extensive nature of the thorium contamination was relatively easy to identify, most of the Lindsay Light thorium in Chicago was shielded from detection by asphalt, sidewalks, streets and buildings. These materials prevent the detection of subsurface thorium. We have tried to overcome this shielding interference by using a gamma survey van, walk-over surveys of vacant properties, and prudent requests for radiation surveillance of construction sites in the Streeterville area.

IV. ENDANGERMENT DETERMINATION

Given the nature of the Site, the nature of the contaminants - radioactive materials that cause external exposure, inhalation, ingestion, and direct contact hazards, as described in Sections II and III, the actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action described in this Action Memorandum, may pose an imminent and substantial endangerment to public health, or welfare, or the environment due to these radioactive materials.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

Pursuant to the AOC, the responsible party will fully remediate any thorium soils encountered at the site until maximum protectiveness of the human health and the environment is achieved. This will involve at a minimum the following actions.

1) Develop a Work Plan for the radiological assessment of the building site.

2) Develop and implement a site health and safety plan.

3) Develop and implement an air monitoring plan.

4) Develop and implement site security measures.

5) Conduct land surveying to the extent necessary to establish a grid system to locate all property boundaries, special features (pipes, storage tanks, etc.), and sample locations.

6) Place borings in critical locations (grid corners, high exposure rate areas, special features, etc.)for the purpose of measuring subsurface radiation levels. Measurements shall be recorded at each 6 inch depth until the natural soils are reached or radiation levels reach background, whichever is the greatest depth.

7) Collect soil samples from the borings and analyze for radionuclide content and RCRA characteristics. These results will then be used to correlate subsurface radiation levels and radionuclide content, and to determine the disposal facility.

8) Based upon soil results, remove, transport and dispose of all characterized or identified hazardous substances, pollutants, wastes or contaminants at a RCRA/CERCLA approved disposal facility in accordance with the U.S. EPA off-site rule.

9) The radiologically-contaminated soil clean-up criterion is 7.1 picoCuries per gram(pCi/g) total radium (Ra-226 + Ra-228) including background. If analyses indicates the existence of additional contaminants, hazardous substances, pollutants or waste, U.S. EPA, after consulting Illinois, will designate additional soil cleanup criteria.

The OSC has begun planning for the provision of post-removal site control, consistent with the provisions of Section 300.415(k) of the NCP. However, the nature of the anticipated response actions should eliminate all exposure threats, which should minimize the need for post-removal site control.

The response actions described in this memorandum directly address actual or threatened releases of hazardous substances, pollutants or contaminants at the facility which may pose an imminent and substantial endangerment to public health and safety, and to the environment. These response actions do not impose a burden on the affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

Applicable or Relevant and Appropriate Requirements (ARARS)

All applicable or relevant and appropriate requirements (ARARS) of federal law will be complied with to the extent practicable. The primary federal Applicable or Relevant and Appropriate Regulation for radioactive soil cleanup criteria is Title 40, Part 192 of the Code of Federal Regulations, "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings." Ancillary ARARs include the Nuclear Regulatory Commissions's (NRC) Title 10, Part 20, of the Code of Federal Regulations, "Standards for Protection Against Radiation," NRC Regulatory Guide 1.86, "Termination of Operating License for Nuclear Reactors," and the Department of Transportation's Title 49 for shipping hazardous materials. Relevant U.S. EPA guidance includes OSWER Directive No. 9200.4-25, issued February 12, 1998, regarding the "Use of Soil Cleanup Criteria in 40 C.F.R. Part 192 as Remediation Goals for CERCLA Sites."

Many of the regulations carried out by the NRC have been delegated to the Illinois Emergency Management Agency, Division of Nuclear Safety. The State has previously identified the regulations at 32 Ill. Admin. Code 332, Licensing Requirements for Source Material Milling Facilities which contain the licensing requirements for source material milling facilities in Illinois as relevant and appropriate to the cleanup of thorium in Streeterville. The cleanup standard for soils and sediments at the site derived from the foregoing federal and state regulations is 7.1 pCi/g combined radium.

U.S. EPA will also implement the principle of ALARA (As Low As Reasonably Achievable) which refers to cleanup of all materials above the cleanup standard. ALARA is described in DOE and NRC orders and regulations and in U.S. EPA regulations at 40 C.F.R. §192.22. U.S. EPA made the decision to achieve ALARA in an attempt to maximize protection of human health.

VI. CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED

Delayed or non-action may result in increased likelihood of external exposure, inhalation, ingestion or direct contact to human populations accessing and working on the site. Also, since there is no threshold for radiological risk, additional exposure to radiological materials will increase the cancer risk.

II. OUTSTANDING POLICY ISSUES

None.

IX. ENFORCEMENT

For administrative purposes, information concerning confidential enforcement strategy for this site is contained in the Enforcement Confidential Addendum.

X. RECOMMENDATION

This decision document represents the selected removal action for the Lindsay Light II Site/Operable Unit 11 located at 160 East Illinois, in Chicago, Illinois, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for this site. Conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal action.

APPROVE: _____ for RK
DIRECTOR, SUPERFUND DIVISION

DISAPPROVE: _____
DIRECTOR, SUPERFUND DIVISION

Attachments: Enforcement Confidential Addendum
1. Index to the Administrative Record
2. Environmental Justice Analysis

cc: D. Chung, US.EPA, 5203-G
M. Chezik, U.S. Department of Interior, w/o Enf. Addendum
D. Scott, Illinois Environmental Protection Agency, w/o Enf. Addendum
S. Davis, Illinois Department of Natural Resources, w/o Enf. Addendum
B. Everetts, Illinois Environmental Protection Agency, w/o Enf. Addendum
K. Worthington, Chicago Department of Environment, w/o Enf. Addendum
B. Haller, Chicago Department of Planning and Development, w/o Enf. Addendum

BCC PAGE

(REDACTED 1 PAGE)

NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION

ENFORCEMENT CONFIDENTIAL ADDENDUM
FOIA EXEMPT ENFORCEMENT SENSITIVE
NOT SUBJECT TO DISCOVERY

LINDSAY LITE II SITE
OU 11 - 160 E. ILLINOIS

CHICAGO, COOK COUNTY, ILLINOIS
JULY 7, 2005

(REDACTED 1 PAGE)

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
LINDSAY LIGHT II/OPERABLE UNIT #11/160 EAST ILLINOIS
CHICAGO, ILLINOIS

ORIGINAL
JULY 8, 2005

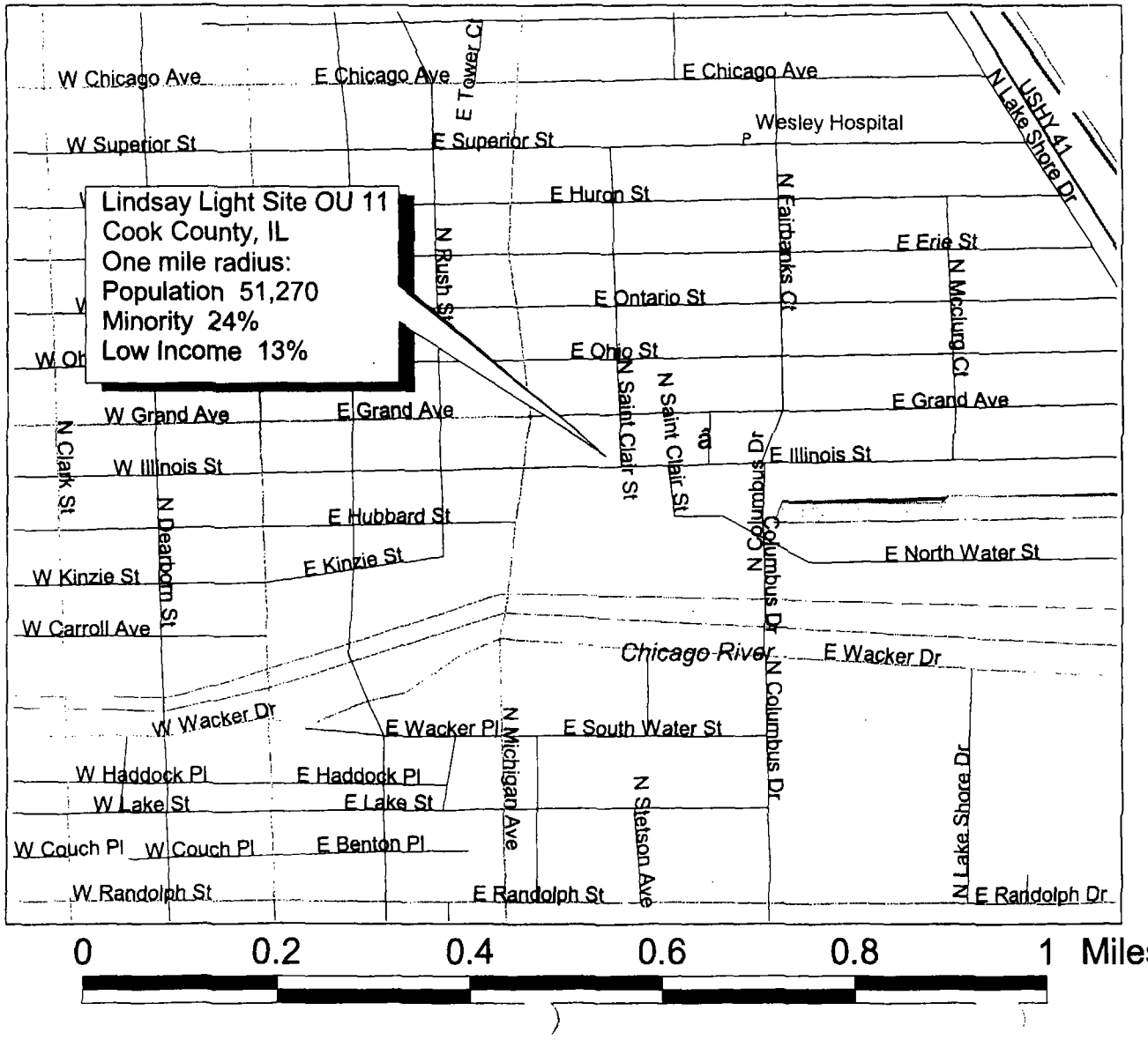
NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	00/00/00	Nachowicz, L., U.S. EPA	Wall, P., Orange Blue,	Letter re: General Notice of Potential Liability for the Lindsay Light II OU 11 Site	
2	04/12/00	Bain Environmental, Inc.	Mark Goodman & Associates, Inc.	Phase I Environmental Assessment for the Kieffer Building	
3	08/15/00	Liniewicz, W. & W. Karla, Benchmark Environmental Services	Bain, L., Bain Environmental, Inc.	Phase II Subsurface Investigation Report for 106 East Illinois Street	
4	08/16/00	Bain Environmental, Inc.	Mark Goodman & Associates, Inc.	Phase II Investigation Exterior Radiological at 106 East Illinois Street	
5	10/12/00	Karla, W., Benchmark Environmental Services	Simon, V., U.S. EPA	FAX Transmission re: Radiological Sampling at 106 East Illinois Street	
6	04/04/01	Simon, V., U.S. EPA	Imke, T., Mark Goodman & Associates, Inc.	Letter re: Radiological Survey at the Kieffer Building	
7	05/07/01	Simon, V., U.S. EPA	Imke, T., Mark Goodman & Associates, Inc.	Letter re: Request for Access to Property at the Kieffer Building	
8	06/05/01	Bain, L., Bain Environmental, Inc.	Simon, V., U.S. EPA	Letter re: Thorium Contamination at Kieffer Building	
9	07/27/01	Simon, V., U.S. EPA	Bain, L., Bain Environmental, Inc.	Letter: Boring Activities at the Kieffer Building	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
10	08/07/01	Bain, L., Bain Environmental, Inc.	Simon, V., U.S. EPA	August 19, 2000 Phase II Investigation/Radiological Survey for 106 East Illinois Street w/ Cover Letter	
11	08/28/02	Simon, V., U.S. EPA	Imke, T., Mark Goodman & Associates and L. Bain, Bain Environmental	Letter re: Issues on Radiological Conditions at the Kieffer Building	
12	01/06/03	Port, E., RSSI	Simon, V., U.S. EPA	Letter re: Thorium Contamination at 106 East Illinois Street	
13	02/14/05	Simon, V., U.S. EPA	Grogan, T., Residential Homes of America, Inc.	Letter re: Disposal of Demolition Debris at 160 East Illinois Street	
14	05/08/05	Chicago Newspaper	Public	Newspaper Advertisement: Grand Opening of Avenue East	
15	05/11/05	GeoSyntec Consultants	U.S. EPA	Memorandum re: Scope of Work for Soil Survey at 106 East Illinois Street	
16	05/12/05	GeoSyntec Consultants	U.S. EPA	Appendix A: Building Survey Results for 160 East Illinois Street	
17	05/12/05	GeoSyntec Consultants	U.S. EPA	Investigation Plans for 160 East Illinois Street	
18	05/12/05	GeoSyntec Consultants	U.S. EPA	Summary of Radiological Survey and Monitoring Conducted at 160 East Illinois Street	
19	05/12/05	Latoza, J., The Rise Group	Fulghum, M., U.S. EPA	Transmittal Letter Forwarding Work Memorandum and Radiological Survey for 160 East Illinois Street	
20	05/23/05	Geosyntec Consultants	U.S. EPA	Memorandum re: Scope of Work for Soil Survey at 160 East Illinois Street (May 11, 2005 Revised May 23, 2005)	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
21	05/23/05	Geosyntec Consultants	U.S. EPA	Summary of Radiological Survey and Monitoring Conducted at 160 East Illinois Street (May 11, 2005 Revised May 23, 2005)	
22	05/23/05	Geosyntec Consultants	U.S. EPA	Drawings for 106 East Illinois Street (May 11, 2005 Revised May 23, 2005)	
23	05/23/05	Latoza, J., The Rise Group	Fulghum, M., U.S. EPA	Transmittal Letter Forwarding the Revised Work Memorandum and Radiological Survey for 160 East Illinois Street	
24	06/01/05	Simon, V., U.S. EPA	Latoza, J., The Rise Group	Letter re: Changes to May 23, 2005 Transmittal of Work Memorandum and Radiological Survey at 106 E. Illinois Street	
25	06/14/05	Simon, V., U.S. EPA	Simon, M., City of Chicago/ Department of Transportation	Letter re: Investigation and Remediation of Potential Radioactive Contamination at 160 East Illinois Street	
26	06/28/05	Simon, V., U.S. EPA	Latoza, J., The Rise Group	Letter: U.S. EPA Comment Letter Dated June 1, 2005 Regarding Work at 160 East Illinois w/ Attached Spectrum Data	

Region 5 Superfund EJ Analysis

Lindsay Light Site OU 11 Chicago, IL



State of Illinois averages:
Minority: 32%
Low Income: 27%

U.S. EPA Region 5
Environmental Justice Case Criteria
for State of Illinois

Minority: 64% or greater

Low Income: 54% or greater

Date of Map: 5/9/05

Source of Map: Census 2000 Database/ ArcView 3.0